

SANTA FE RIVER SURFACE WATER – GROUNDWATER INTERACTIONS



*Santa Fe River at
South Meadows Rd bridge
June 19, 2019*

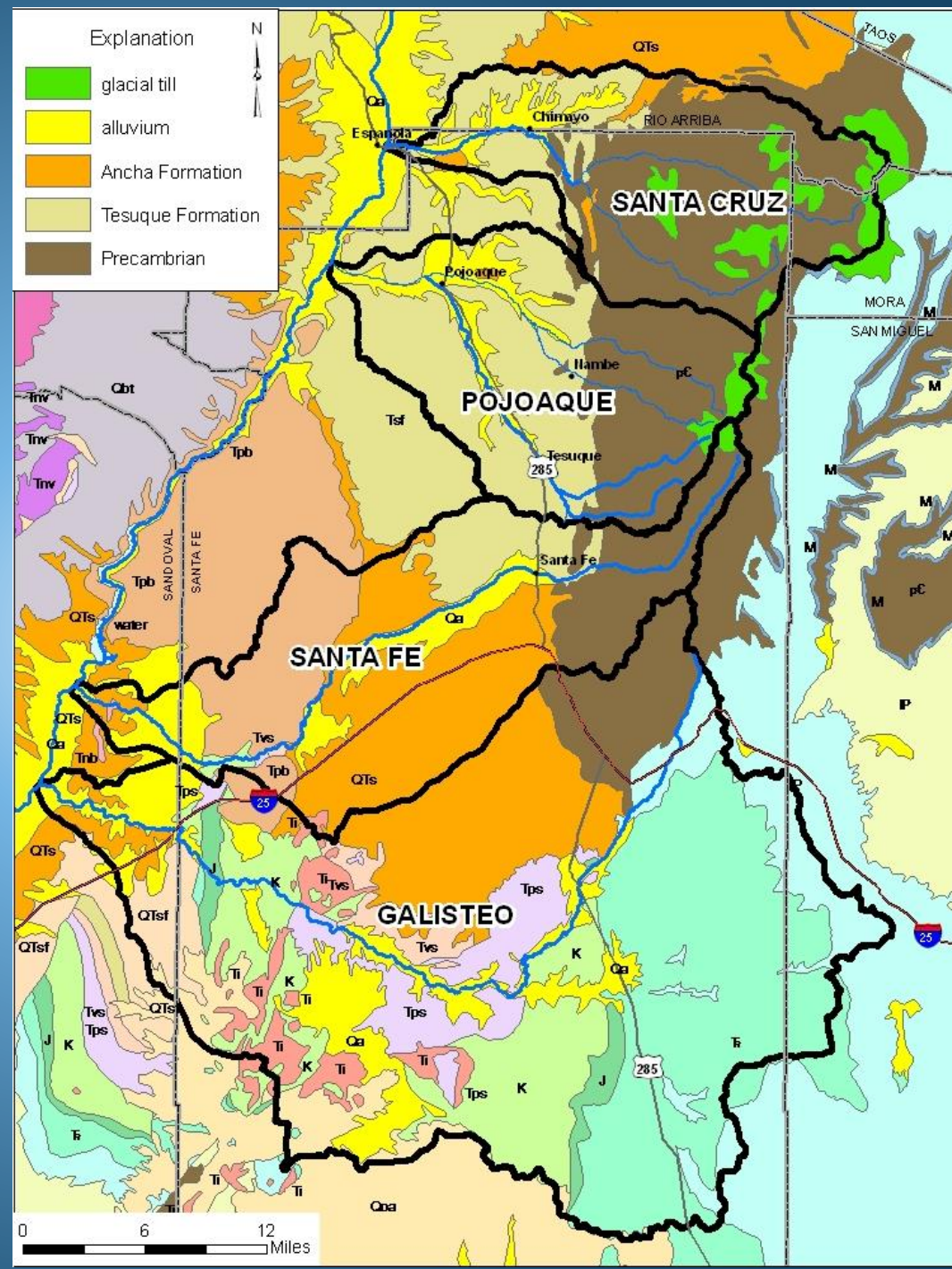


Steven Finch, JSAI
Alan Hook, City of Santa Fe

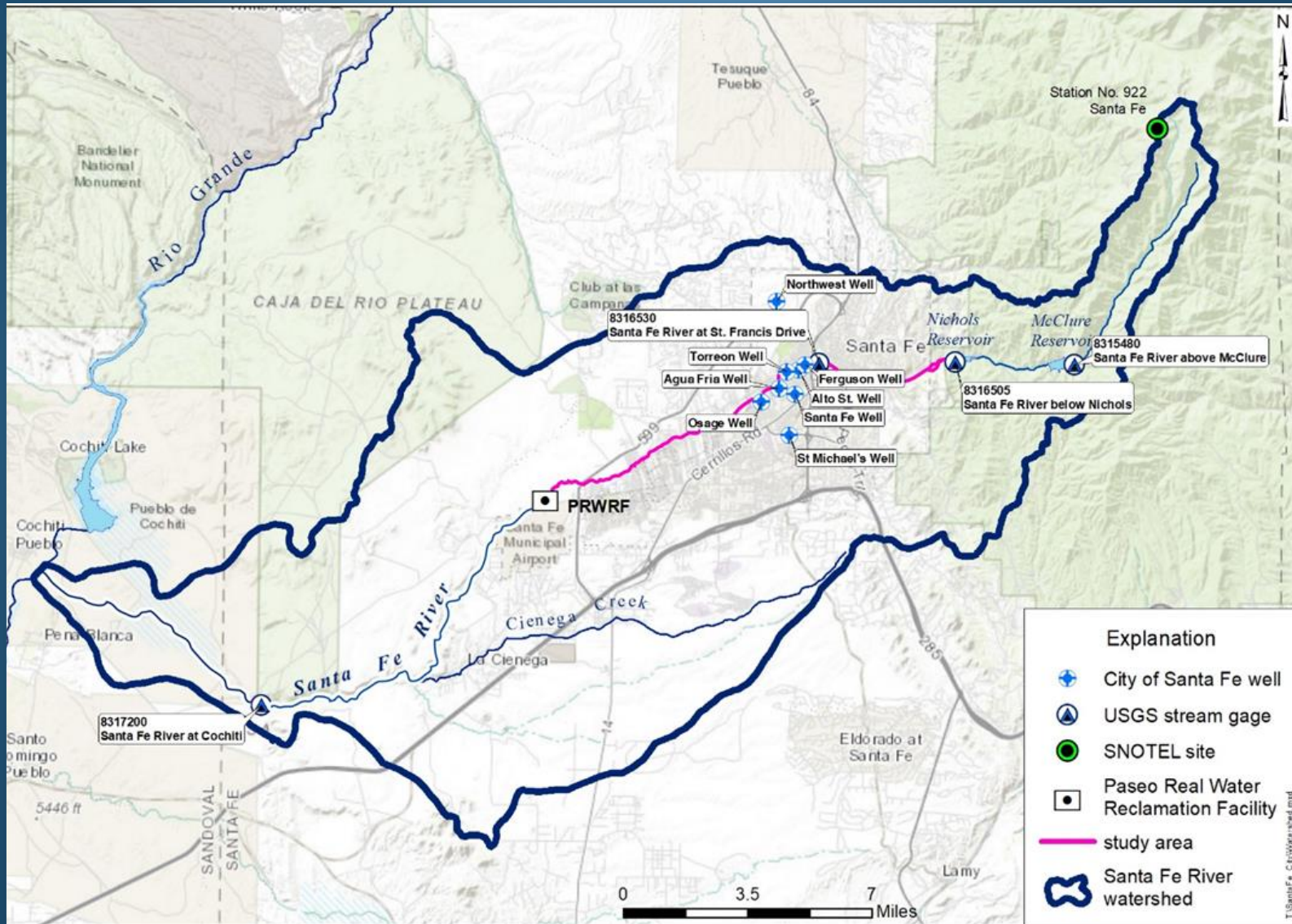
March 2020



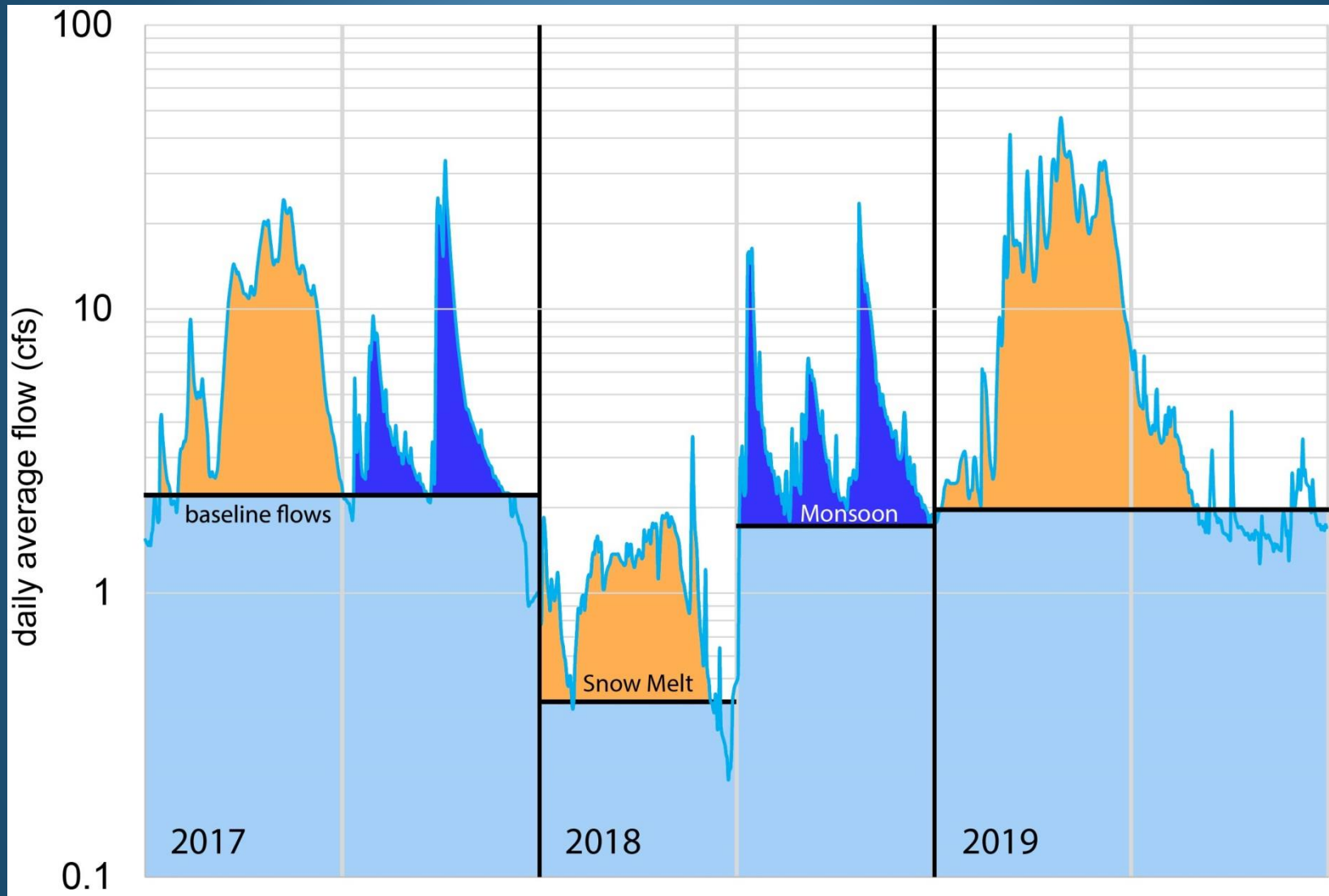
Surface water –
groundwater
interactions start in
the upper reaches
of the watershed



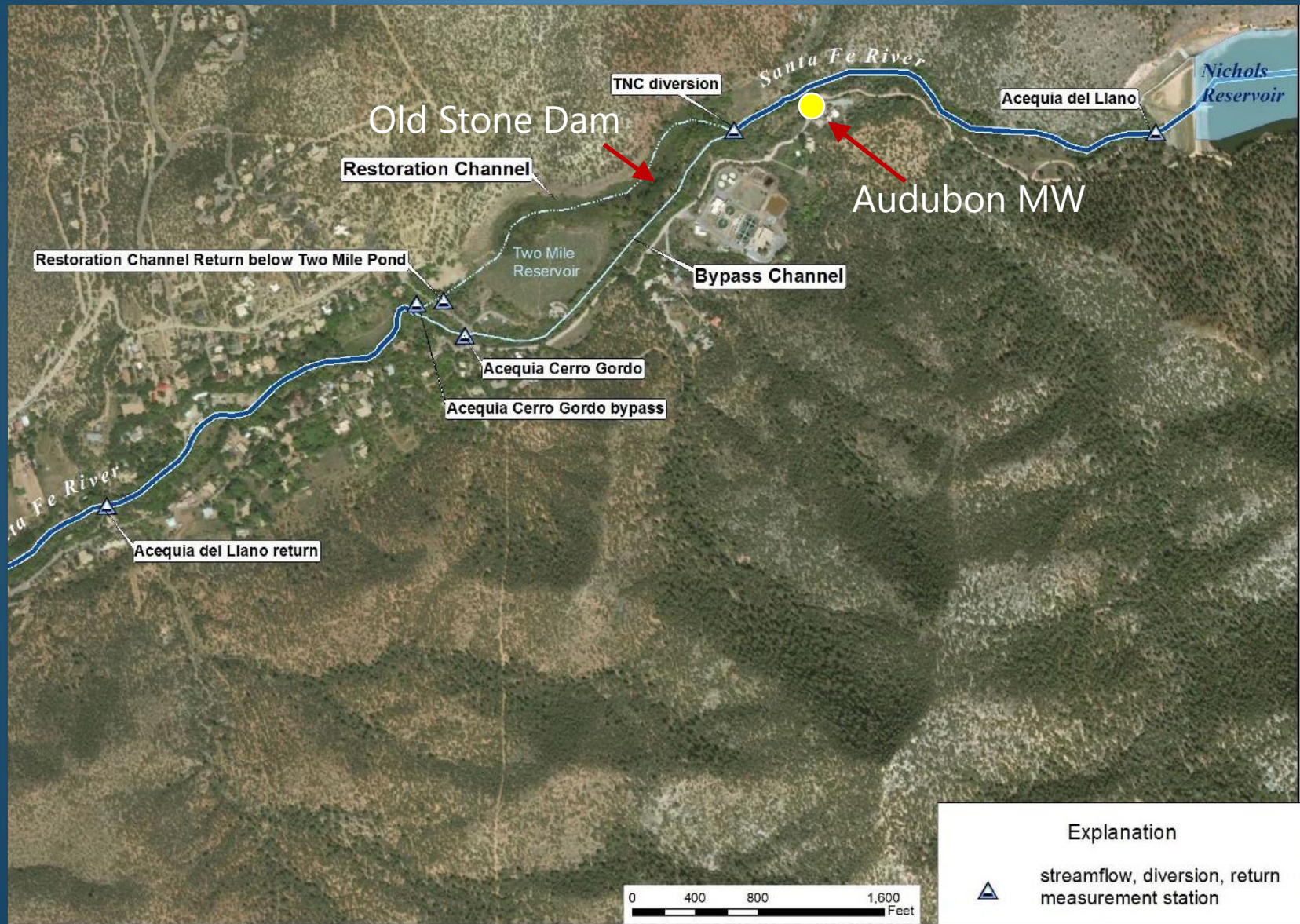
Santa Fe River watershed map and study area



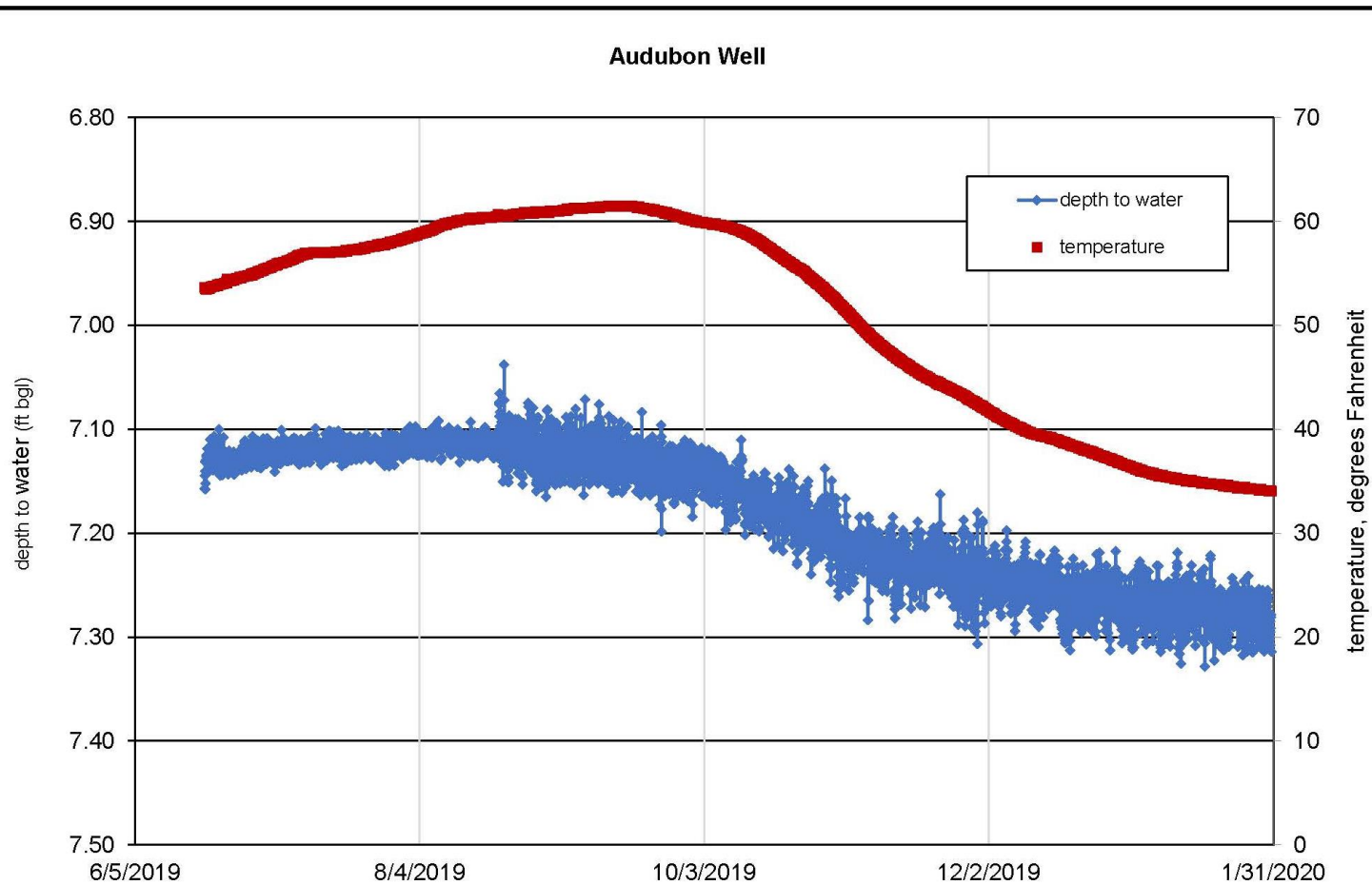
Santa Fe River Above McClure



Two Mile Monitoring Locations



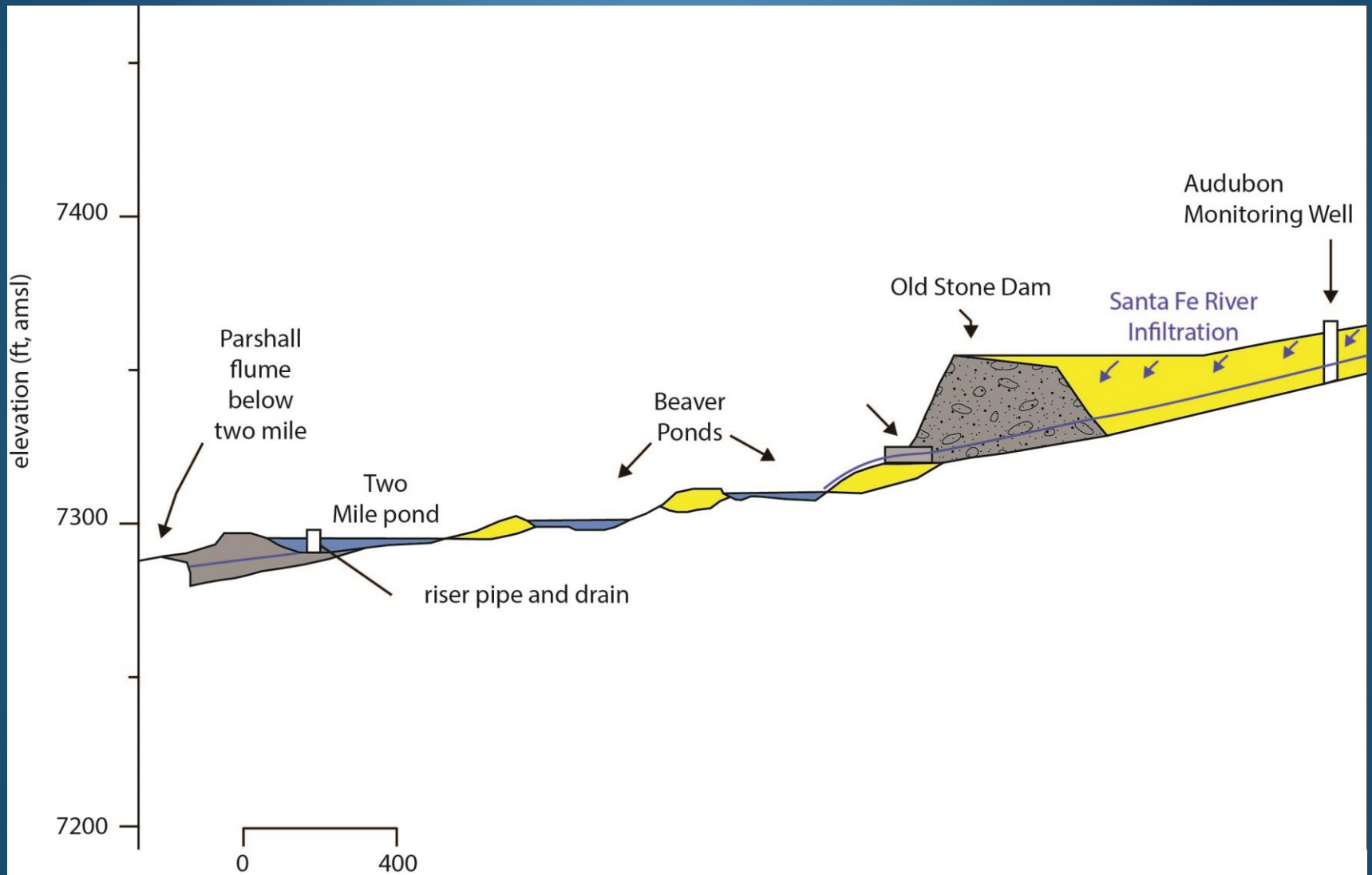
Audubon Well Hydrograph



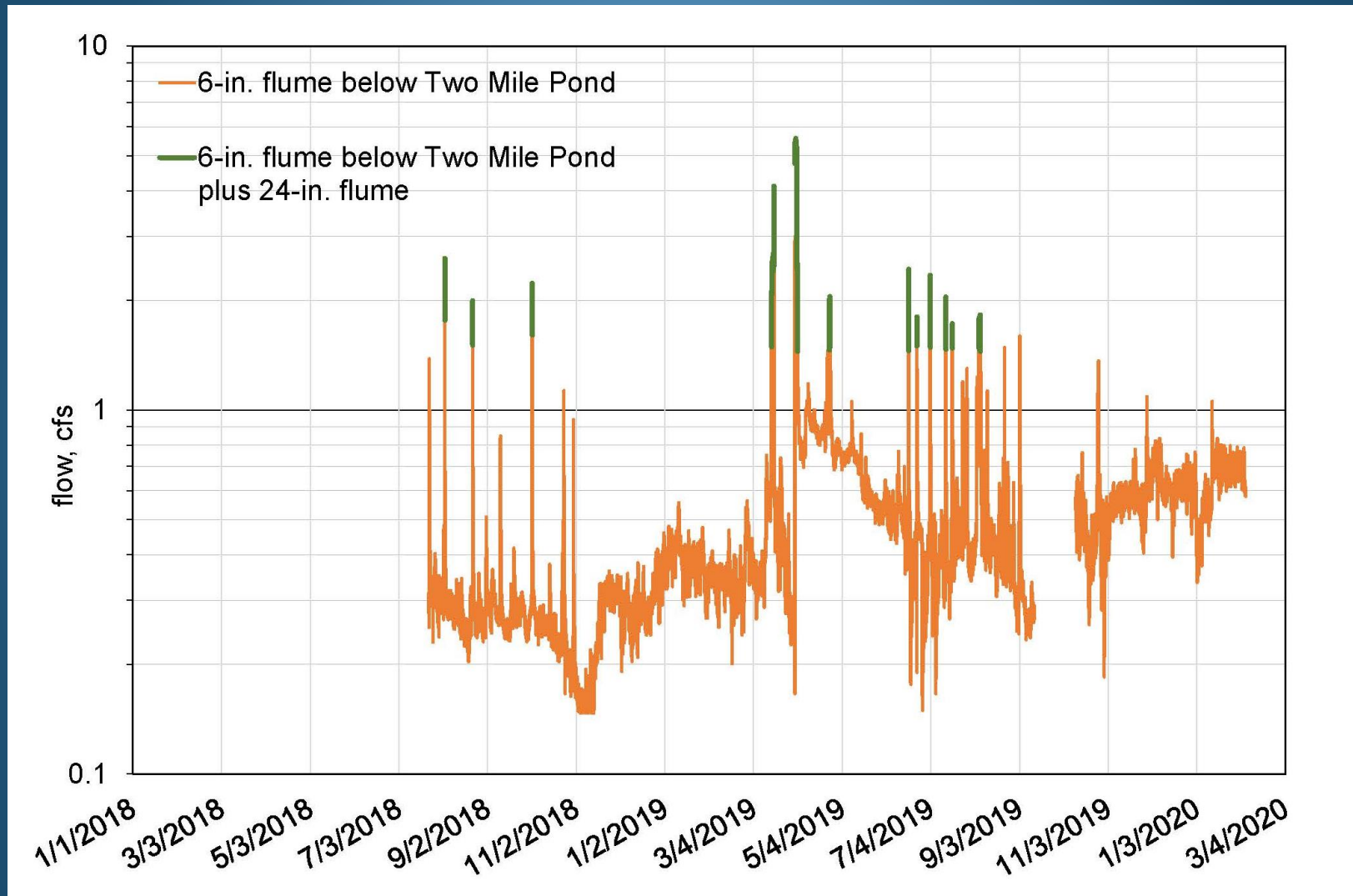
Graph of depth to water and temperature at Audubon Center Observation Well along the Santa Fe River, Santa Fe, New Mexico.

JOHN SHOMAKER & ASSOCIATES, INC.

Two-Mile Conceptual Cross Section

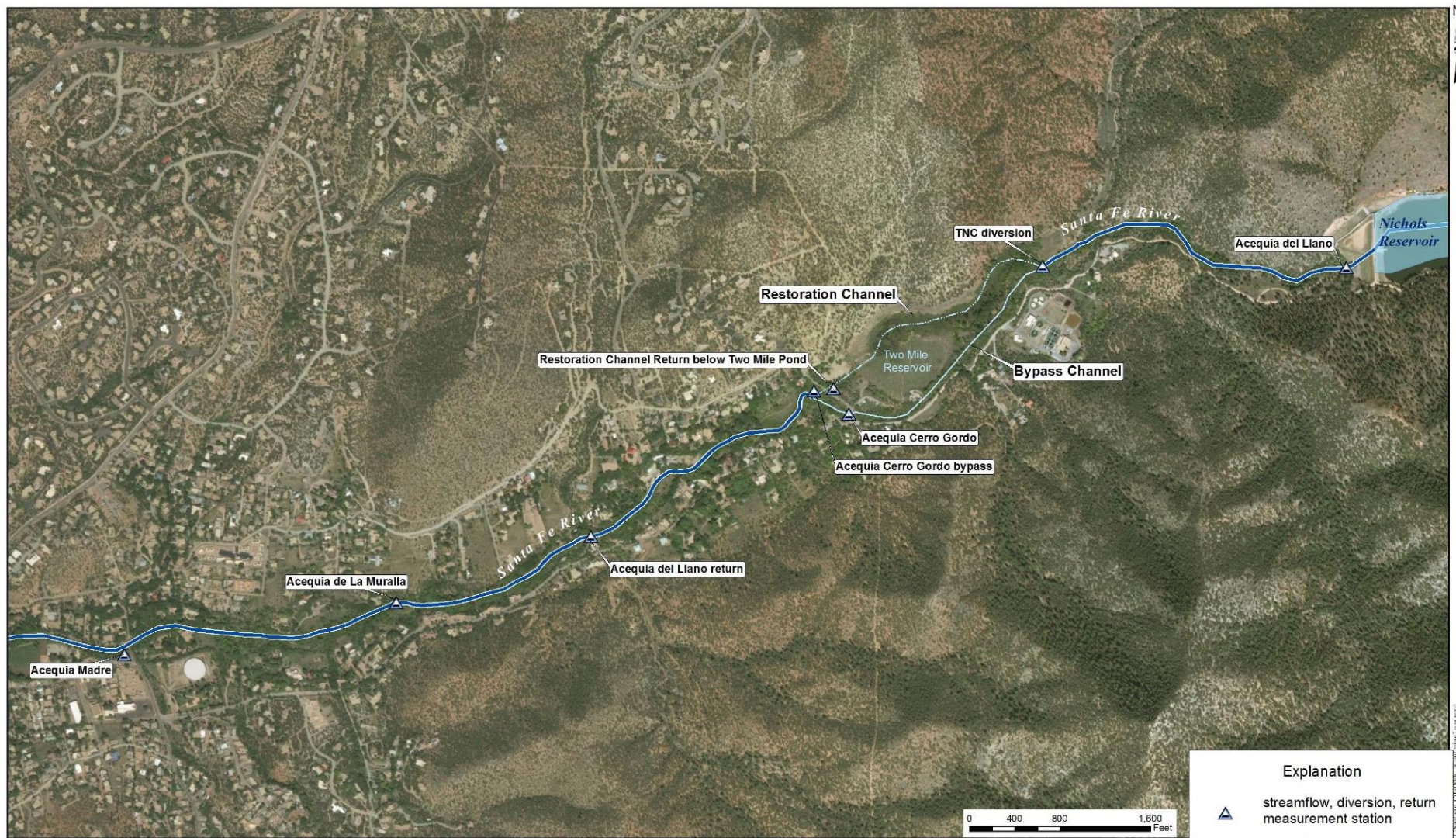


Below Two Mile Hydrograph

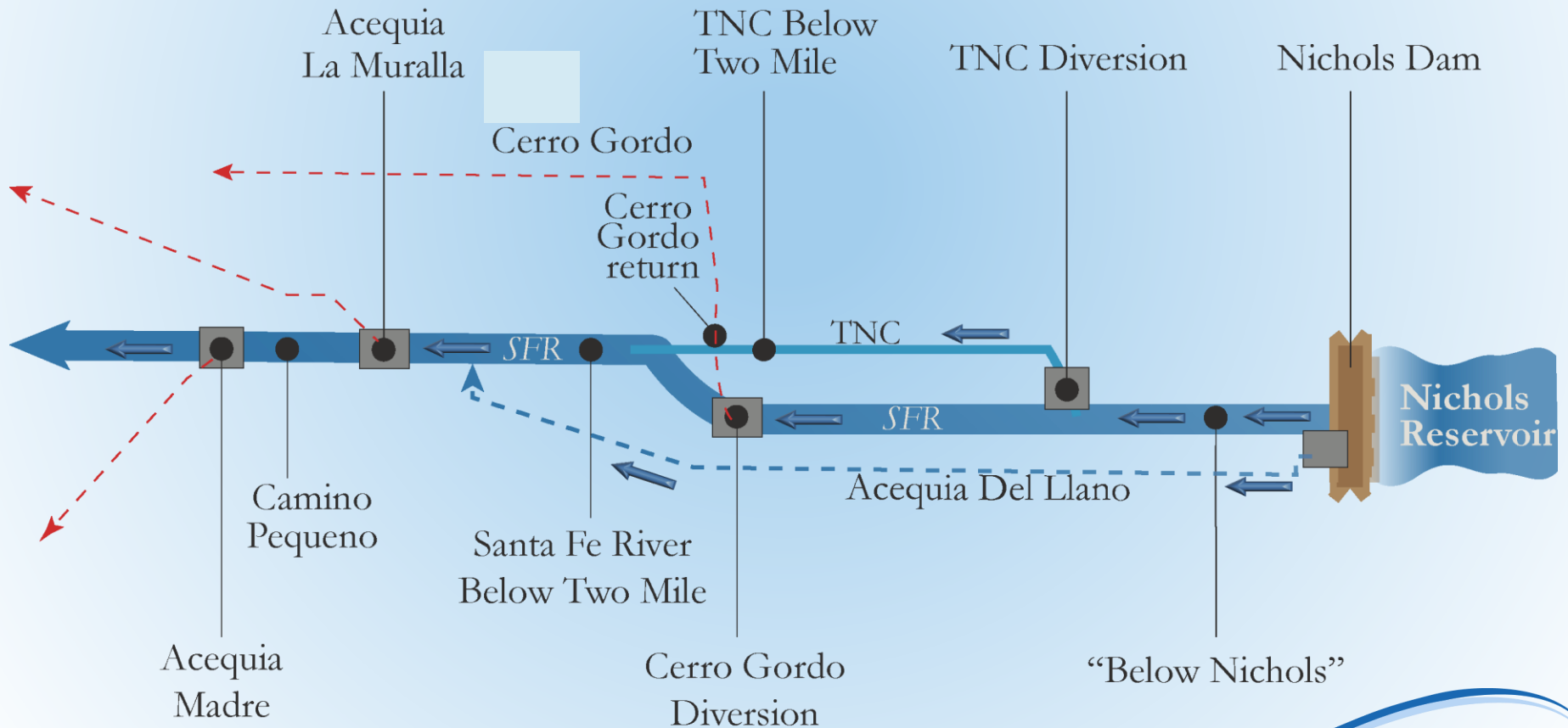
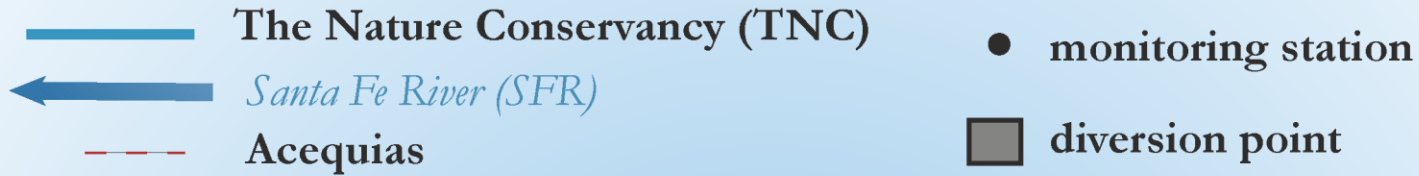


average flow = 0.5 cfs

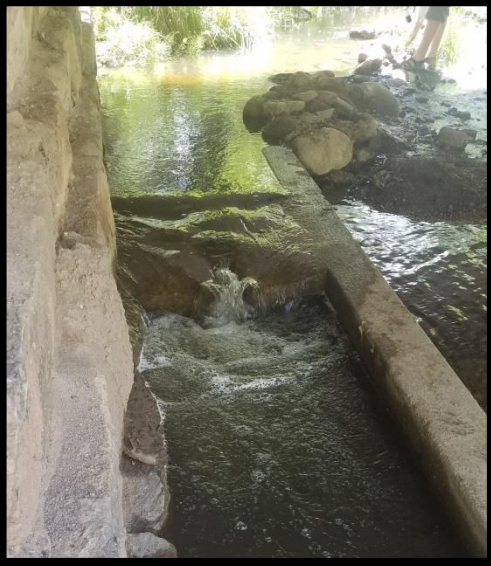
Two Mile and Acequia Monitoring Locations



Diversions



Diversion Measurements



Cerro Gordo



Cerro Gordo bypass



TNC Diversion
staff gage

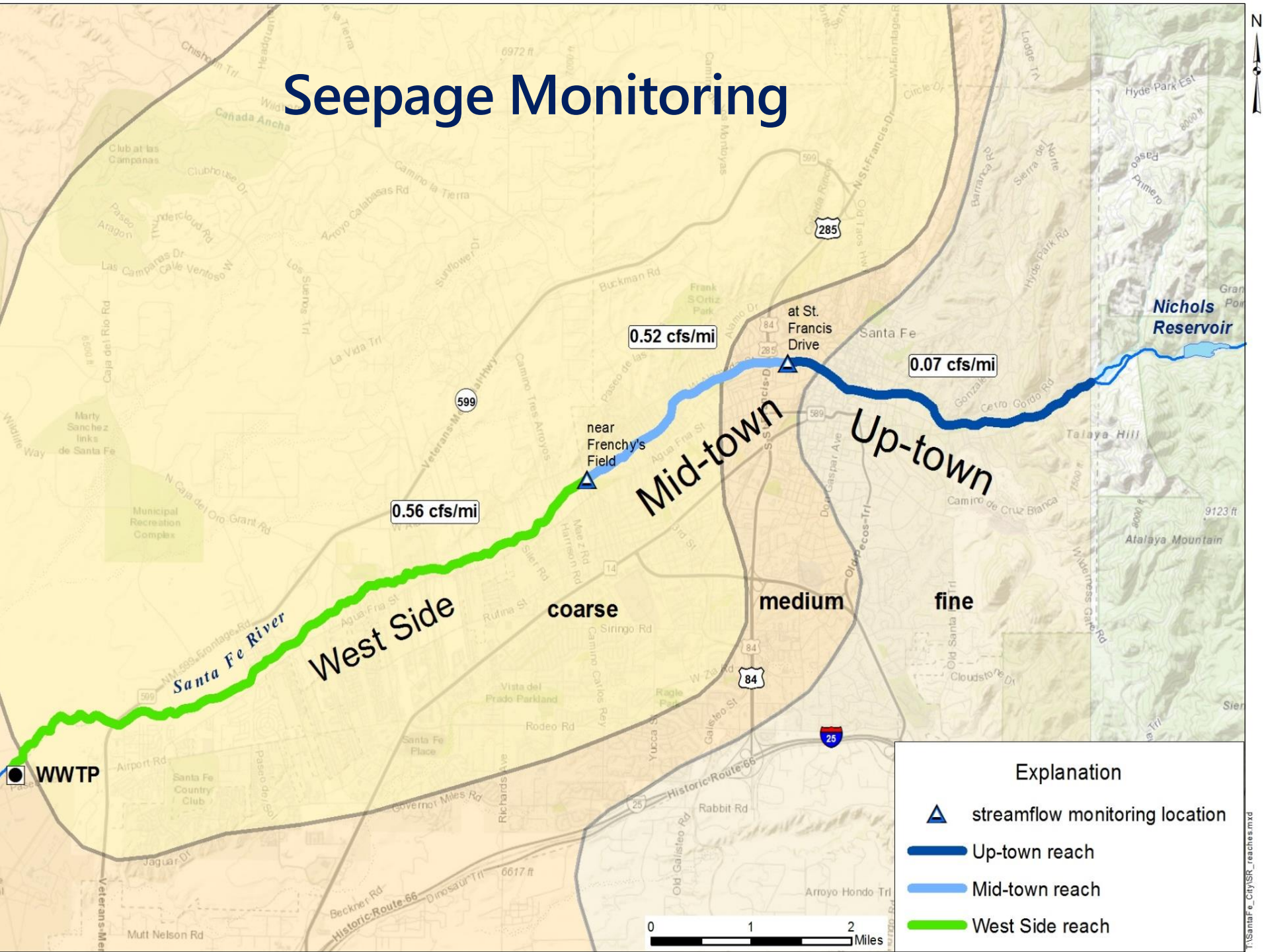


Acequia Madre



Acequia La Muralla

Seepage Monitoring



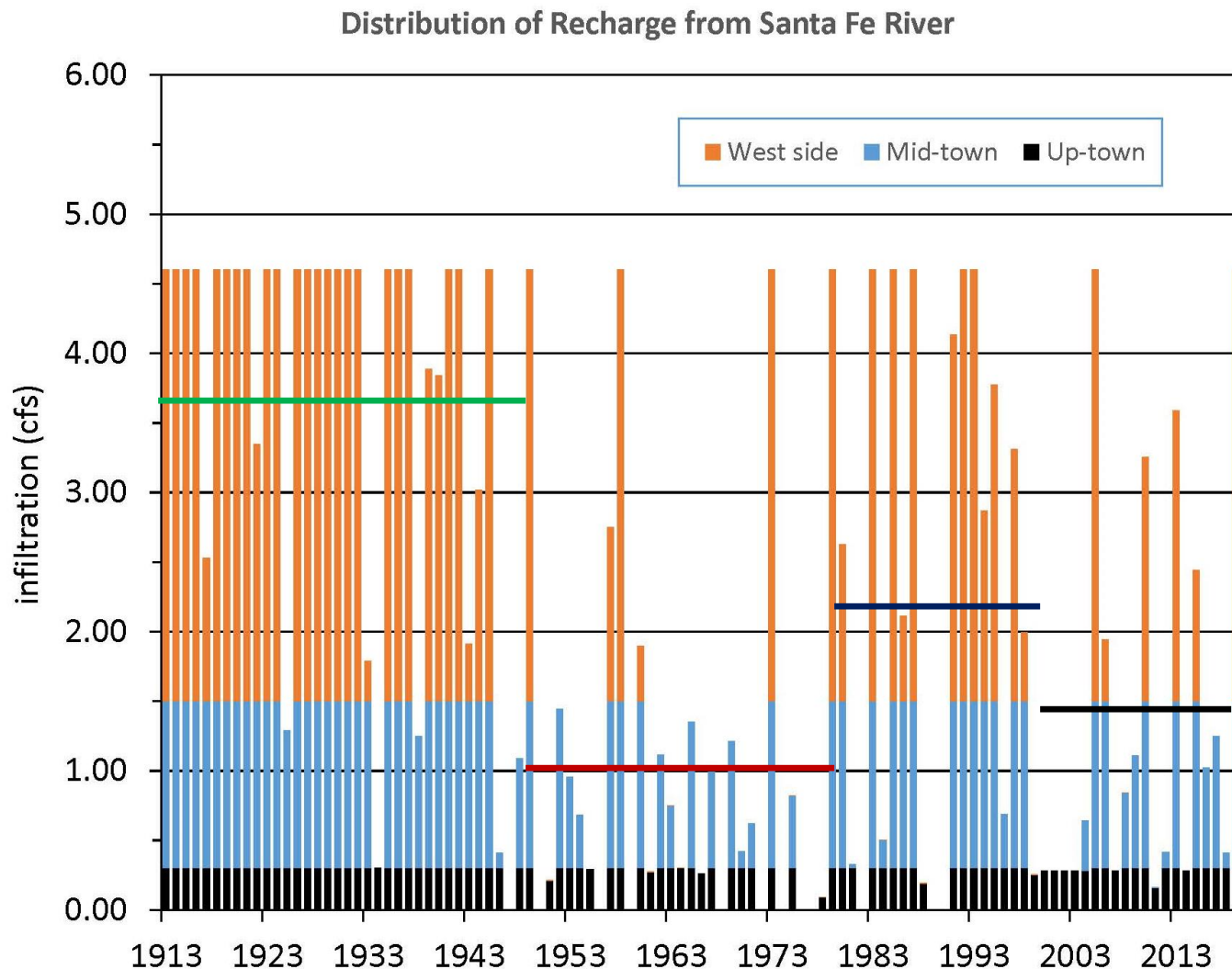
SEEPAGE STUDIES SUMMARY

Reach	Length (mi)	Average seepage rate (cfs)	Seepage for reach (cfs)
Up-town	4.4	0.07	0.3
Mid-town	2.3	0.52	1.2
West-side	5.7	0.58	3.1

4.6 cfs infiltration capacity from
Below Nichols to PRWRF

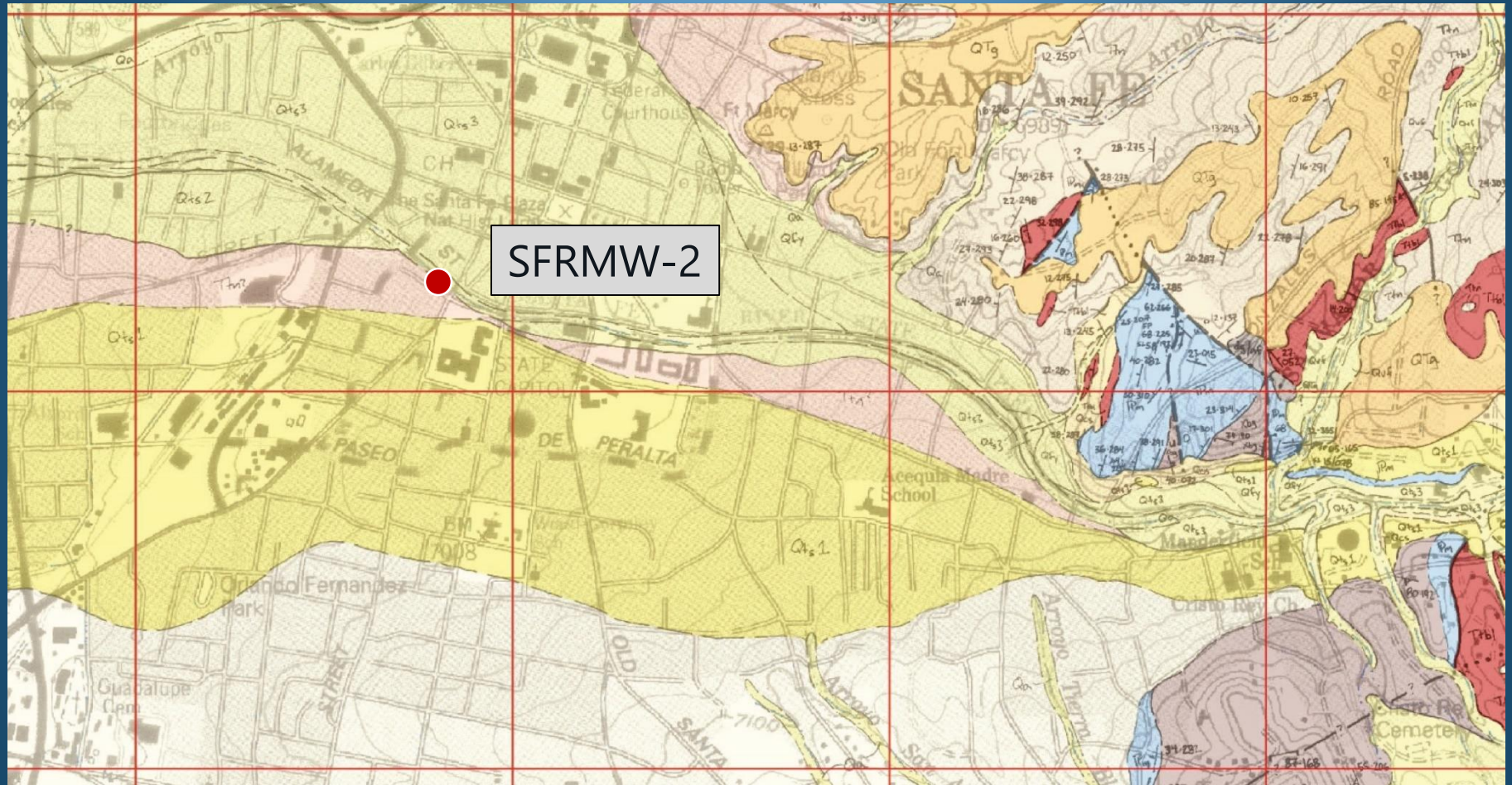


Estimated Historical Seepage

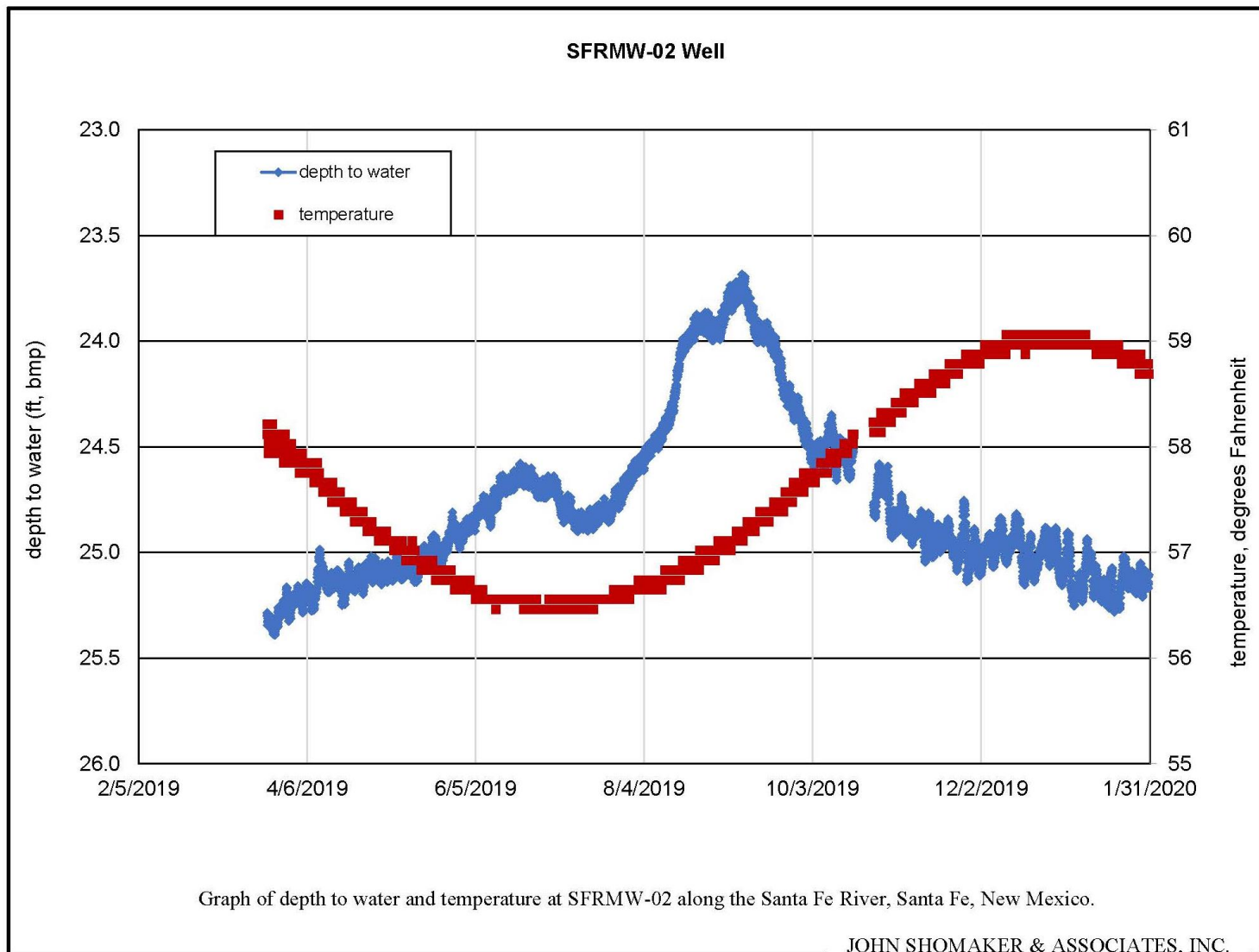


* Estimate does not include recharge from storm-water runoff

Geologic Map of Up-town Reach SFRMW-2 alluvial system



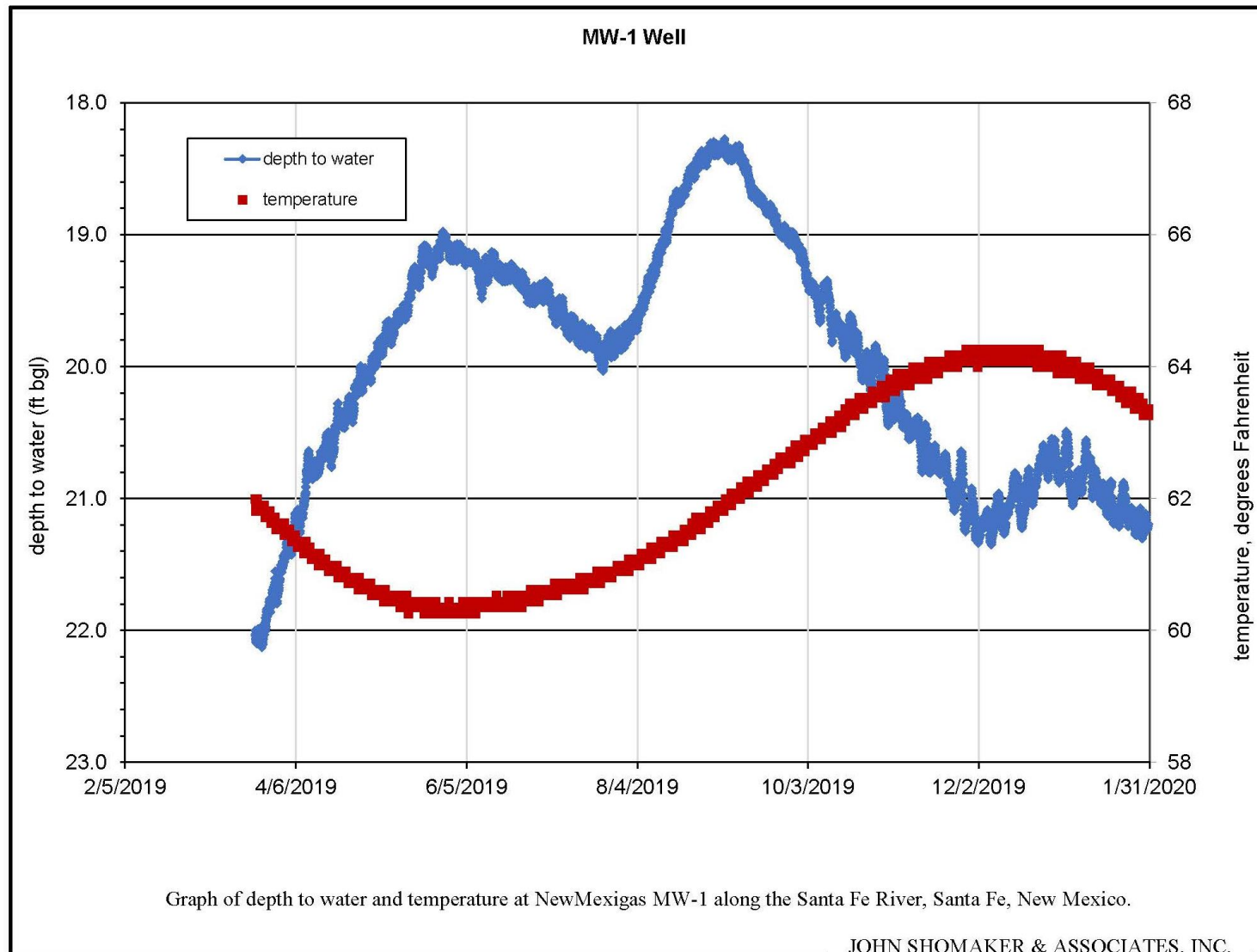
Up-town Reach – SFRMW-2 hydrograph



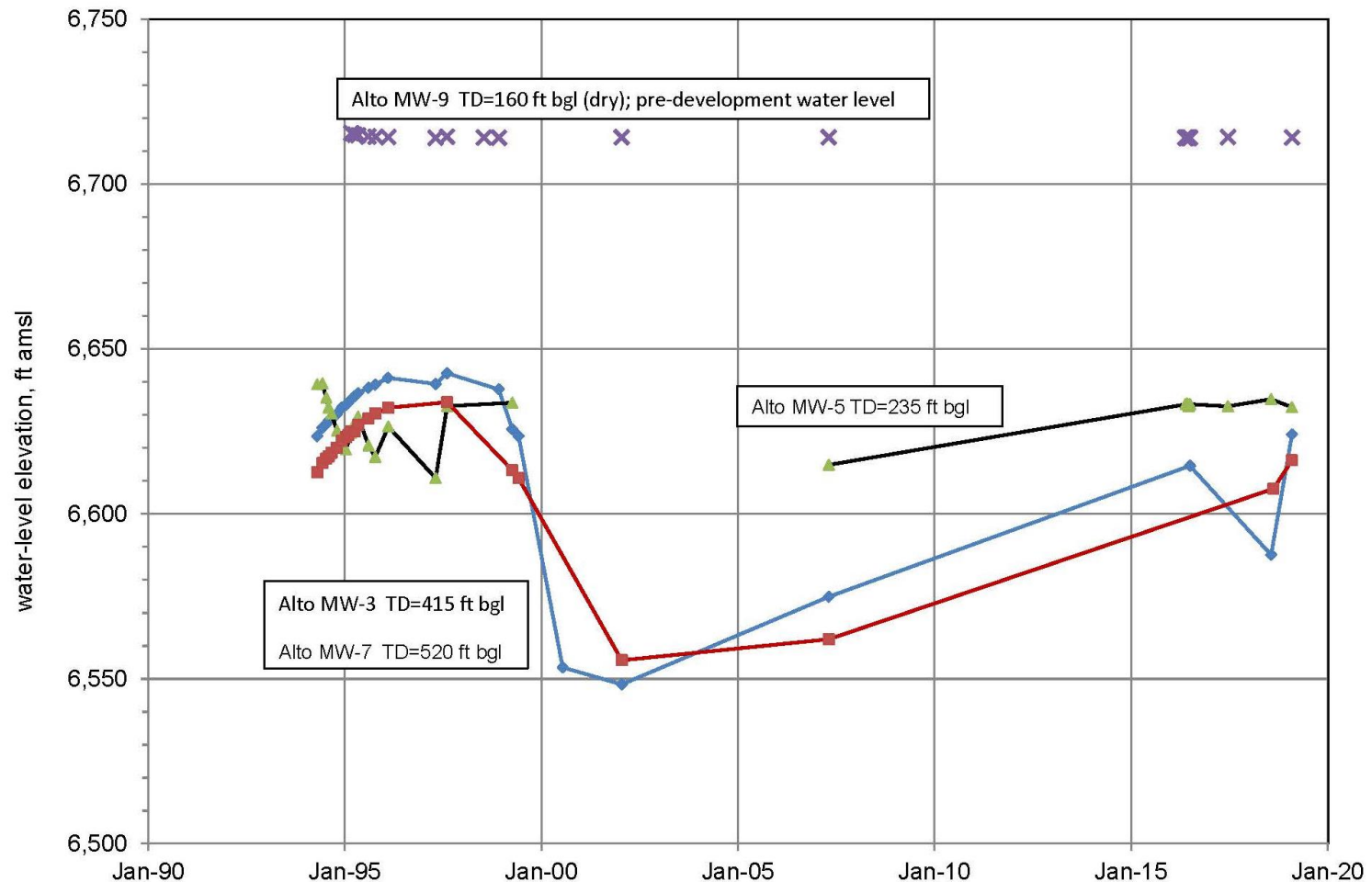
Groundwater Monitoring Locations



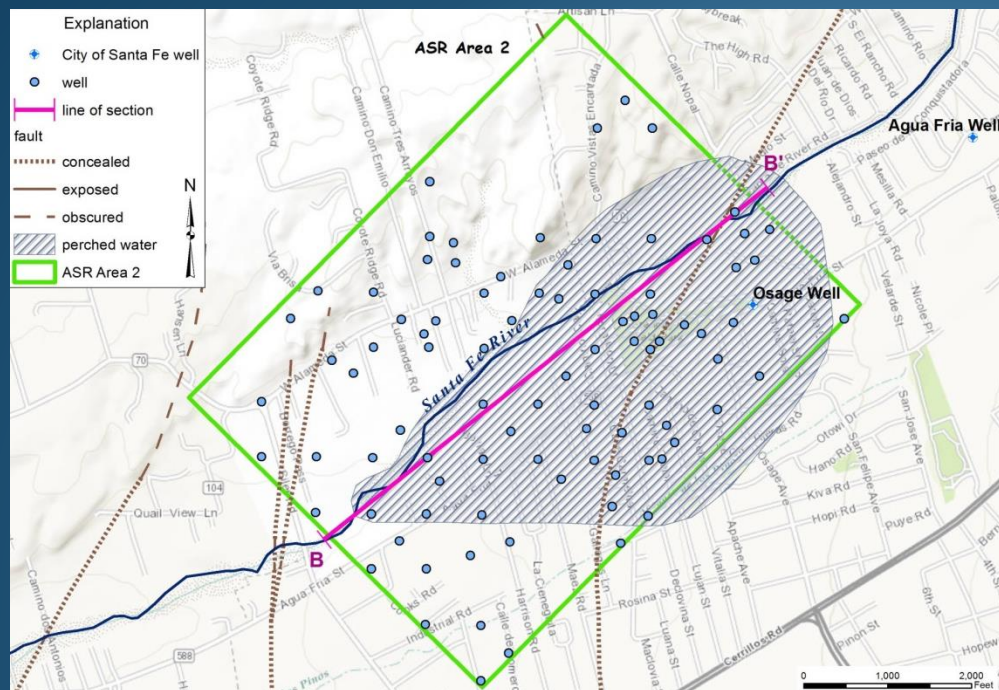
Mid-town Reach – MW-1 hydrograph



Mid-town Reach - Alto MWs hydrograph

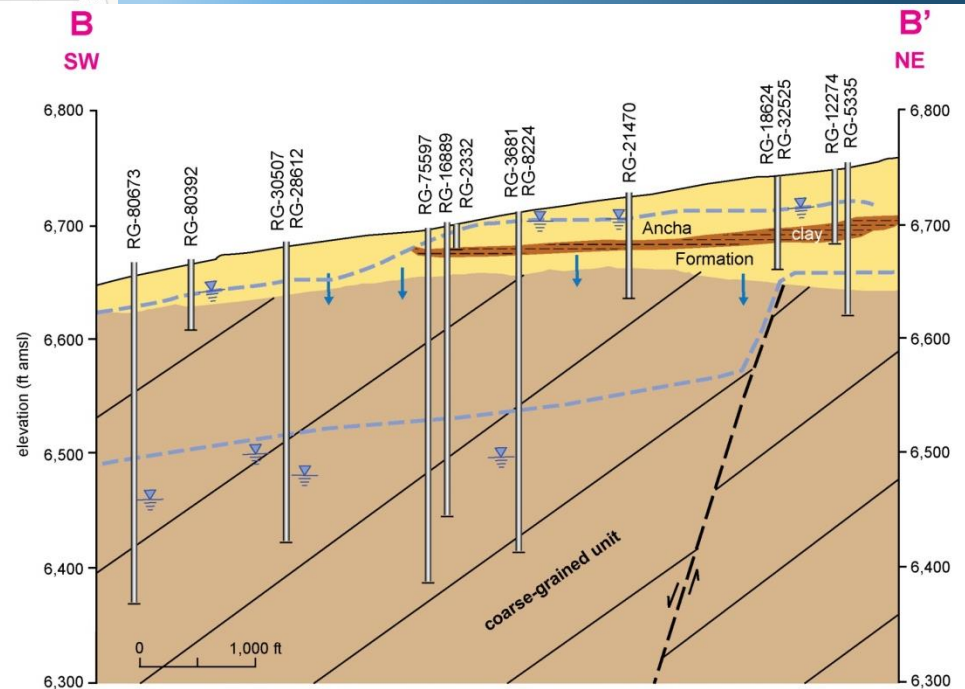


Hydrograph for Alto Street MW-3, MW-5, and MW-9, Santa Fe, New Mexico.



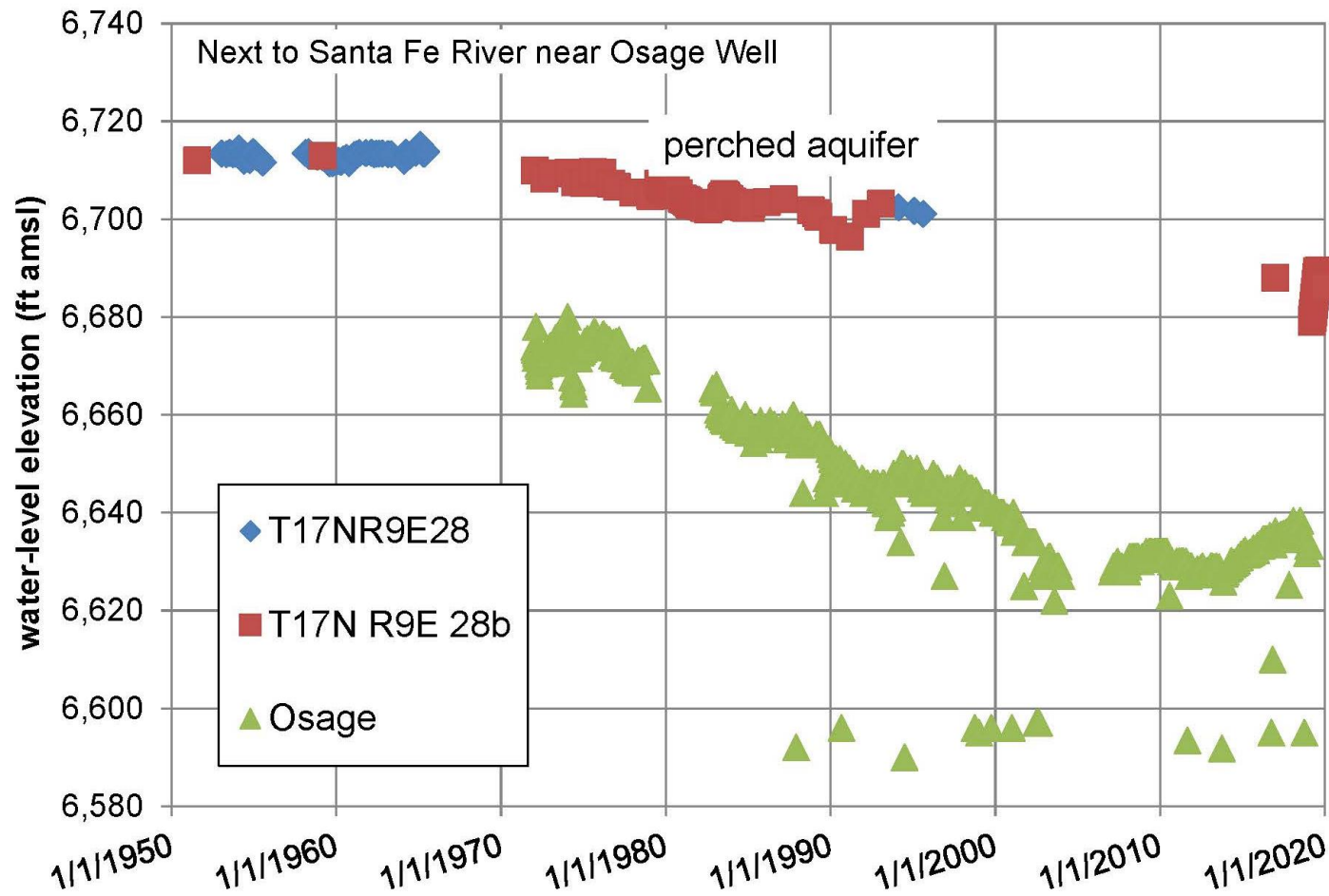
Localized Perched Aquifer Systems in Mid-town and Up-town Reaches

Perched aquifer systems recharged by Santa Fe River infiltration will recharge regional aquifer

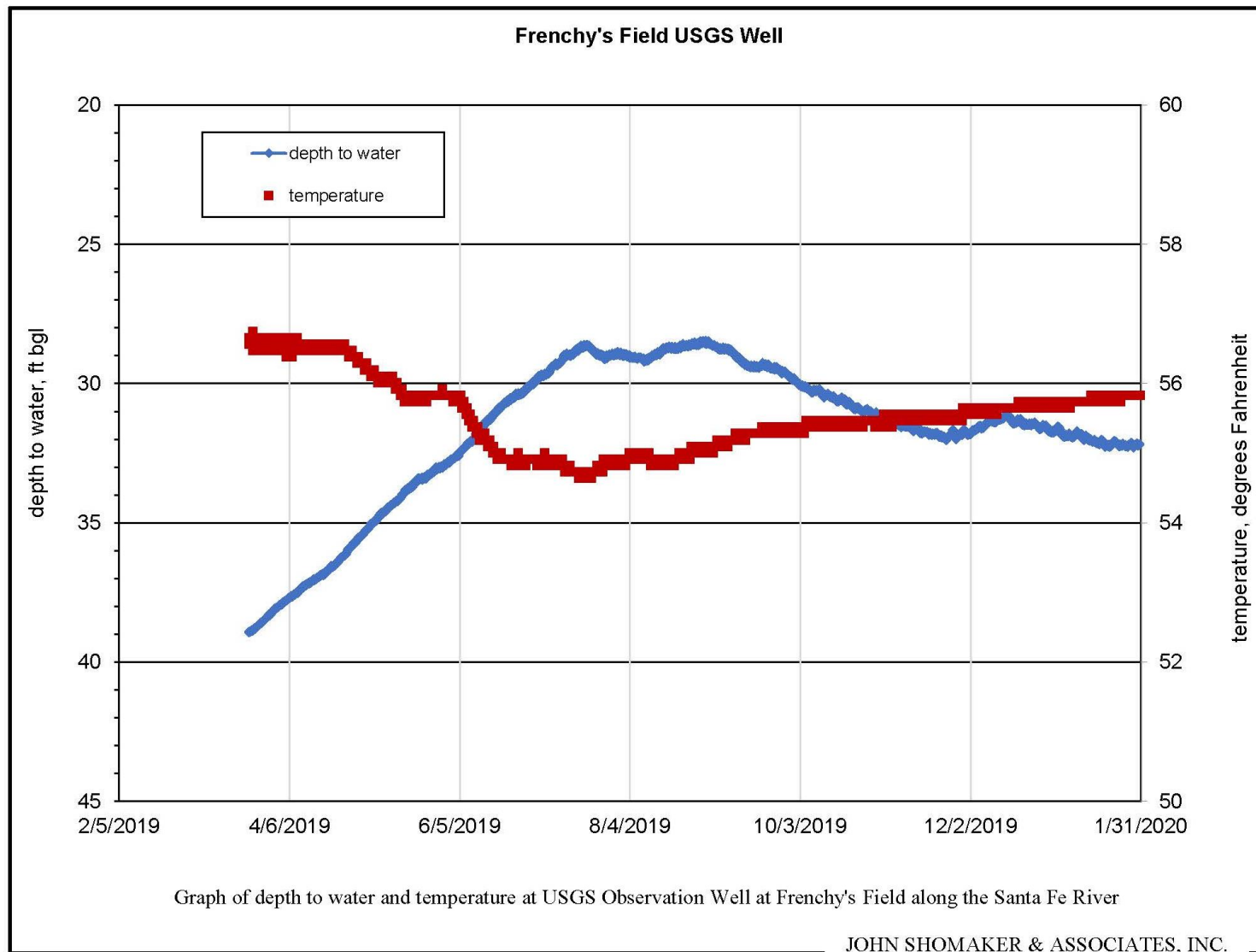


West-side Reach

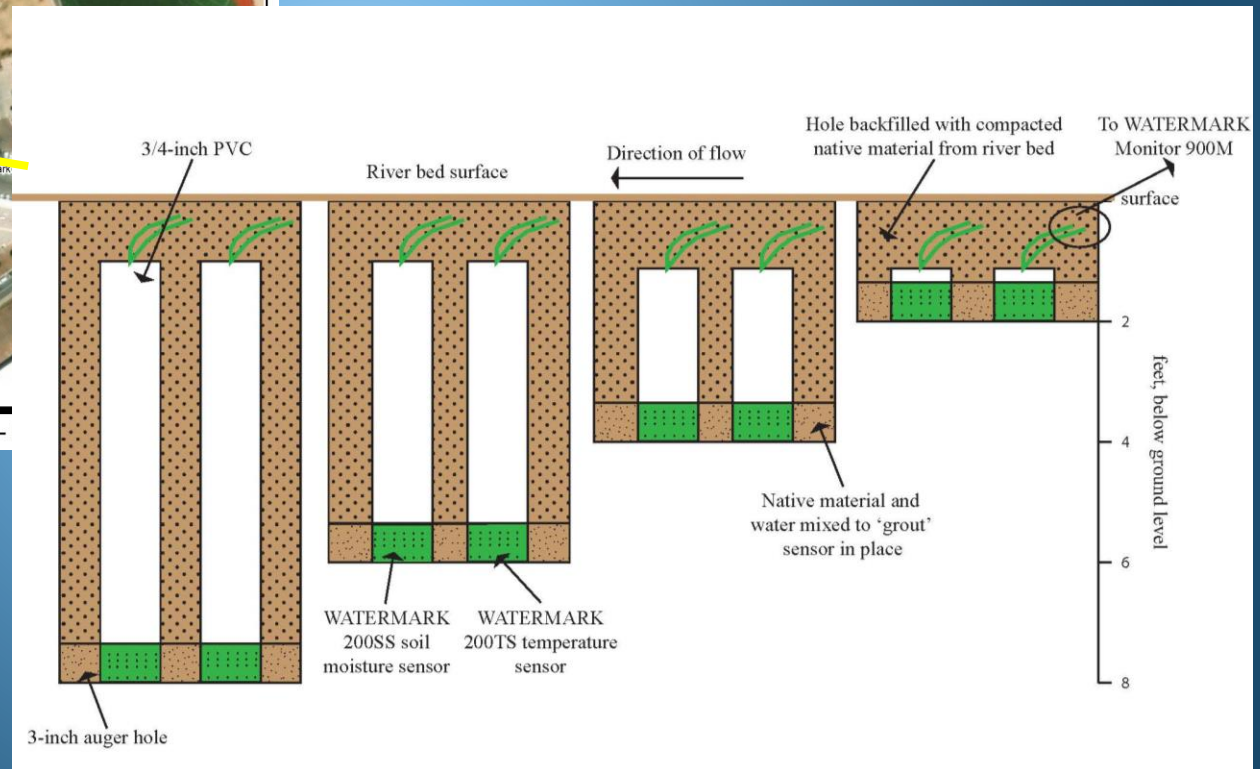
USGS Frenchy's and Osage Hydrograph




West-side Reach Frenchy's Field



Soil Moisture Monitoring in Santa Fe River Channel at Alto Park will be added this spring



Summary

1. The Santa Fe River surface water and groundwater monitoring system helps track target flows from Living River Initiative
 2. Restoration channel and Two-mile pond receive continuous flows from infiltrated stream flow above Old Stone Dam
 3. Most of the Living River Target Flows infiltrate and recharge the aquifer
 4. Some streamflow travels past PRWRF during spring pulse and above normal spring flows
 5. City Well Field Optimization study concluded that recharge from SFR flows are needed to sustain City Well Field groundwater supply
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THANK YOU, AND QUESTIONS



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CITY OF
Santa Fe

